

Poster Program

Poster Session 1
Monday 17 June 2019, 12:40 – 13:15
Room – Ballroom B

- [P1.01] **A homogenous turn-off fluorescence graphene quantum dots based immunosensor for the detection of *Xanthomonas oryzae* pv. *Oryzae***
N. Awaludin^{1,2}, J. Abdullah^{*1}, F. Salam², K. Ramachandran², N.A. Yusof¹, H. Wasoh¹, ¹University of Putra Malaysia, Malaysia, ²Malaysian Agricultural Research and Development Institute, Malaysia
- [P1.02] **Silver nanoplates-based paper assay for colorimetric detection of hydrogen sulfide**
Y.J. Ahn^{*1}, Y.G. Gil², H.J. Jang², G.J. Lee¹, ¹Kyung Hee University, Republic of Korea, ²Kwangwoon University, Republic of Korea
- [P1.03] **Portable dPCR on a plasmonic heating device**
C.D. Ahrberg^{*}, J.M. Lee, B.G. Chung, Sogang University, Republic of Korea
- [P1.04] **Colorimetric detection of *Ganoderma boninense* using DNA-gold nanoparticles conjugates**
S.A. Mohshim^{1,2}, S.A. Alang Ahmad^{*1}, M.Z. Ahmad², L.S. Wong³, ¹University Putra Malaysia, Malaysia, ²Malaysian Agricultural Research and Development Institute, Malaysia, ³University of Manchester, UK
- [P1.05] **Biocompatible carbon quantum dots from *Diplocyclos palmatus*: A novel on-off-on fluorescence sensor for Cd²⁺ and Fe³⁺ and sunlight photocatalyst for dye degradation and their toxicity in Zebrafish**
R. Alexandri^{*}, A. Veera Ravi, Alagappa University, India
- [P1.06] **Self-assembled monolayer epitope bridges for molecular imprinting and cancer biomarker sensing**
J. Drazgowska, B. Schmid, R. Sussmuth, Z. Altintas^{*}, Technical University of Berlin, Germany
- [P1.08] **Detection of breast cancer biomarker (CA 15-3) in human sera based on NiO thin film electrode**
K. Arora^{*}, M. Tomar, V. Gupta, University of Delhi, India
- [P1.09] **Wash-free detection of picomolar level C-reactive protein using a waveguide-mode sensor**
H. Ashiba^{*1}, C. Oyamada², K. Hosokawa², K. Ueno³, M. Fujimaki¹, ¹National Institute of Advanced Industrial Science and Technology (AIST), Japan, ²Fujimori Kogyo Co.,Ltd., Japan, ³C&I Co.,Ltd., Japan
- [P1.10] **Molecularly imprinted polymers for determination of chosen food toxins**
V. Ayerdurai^{*1}, M. Cieplak¹, P.S. Sharma¹, F. D'Souza², W. Kutner^{1,3}, ¹Polish Academy of Sciences, Poland, ²University of North Texas, USA, ³Cardinal Stefan Wyszyński University in Warsaw, Poland
- [P1.11] **A simple and portable electrochemical immunosensor for detection of *Mycobacterium tuberculosis***
U.Z.M. Azmi^{*}, N.A. Yusof, J. Abdullah, Universiti Putra Malaysia, Malaysia
- [P1.12] **Synthrocyte: Synthetic erythrocytes to develop a fast and simple assay for global influenza surveillance**
A. Sánchez-Cano¹, C. Andrés-Verges², T. Pumarola¹, R. Herance¹, A. Antón-Pagarolas², E. Baldrich^{*1}, ¹Vall Hebron Research Institute (VHIR), Spain, ²Vall Hebron University Hospital (VHUH), Spain
- [P1.13] **Washing-free cortisol detection in human serum using a displacement immunosensor**
P. Nandhakumar, A. Bhatia^{*}, H. Yang, Pusan National University, Republic of Korea
- [P1.14] **Enhanced detection of toxic amyloid-beta biomarkers using PEP-on-DEP sensor**
Y. Hashimoto¹, P.T. Tue¹, Y. Takamura¹, M. Biyani^{*1,2}, ¹Japan Advanced Institute of Science and Technology, Japan, ²BioSeeds Corporation, Japan
- [P1.15] **Carbon dots- silver nanohybrid using white-rot mushroom: Metal sensing, bioimaging, antimicrobial, and DNA binding studies**
T. Boobalan^{*1}, N. Arumugam², M. Sethupathi¹, N. Sengottuvelan¹, M. Jothi Basu¹, A. Arun¹, ¹Alagappa University, India, ²Indian Institute of Madras, India

- [P1.16] Graphene electrochemistry: Manipulating fundamentals for improved electroanalytical applications**
D.A.C. Brownson*, A. Garcia-Miranda Ferrari, C.E. Banks, Manchester Metropolitan University, UK
- [P1.17] Optical biosensor based on interaction between polypyrrole and glucose oxidase**
U. Bubniene*¹, R. Karpicz², A. Ramanavicius¹, ¹Vilnius University, Lithuania, ²Center for Physical Sciences and Technology, Lithuania
- [P1.18] An ultrasensitive voltammetric and impedimetric immunosensors based on manganese dioxide-graphene nanoplatelets composite and core shell Fe₃O₄@Au nanoparticles for the label-free detection of carcinoembryonic antigen**
P. Butmee*¹, G. Tumcharern², G. Thouand³, K. Kalcher⁴, A. Samphao¹, ¹Ubon Ratchathani University, Thailand, ²National Science and Technology Development Agency, Thailand, ³University of Nantes, France, ⁴University of Graz, Austria
- [P1.19] Ag nanoparticles on AgCl nanoparticles and carbon nanotubes modified glassy carbon electrode for simultaneous analysis of hydroquinone, arbutin and ascorbyl glucoside**
N. Butwong*¹, S. Srijaranai², ¹Rajamangala University of Technology Isan, Thailand, ²Khon Kaen University, Thailand
- [P1.20] Nanoparticle based 3D membrane biosensor for detection of C-reactive protein**
L. Cao*, J. Kiely, R. Luxton, University of the West of England, UK
- [P1.21] Development of automated competitive ELISA paper-based analytical device using dissolvable sucrose valves for Aflatoxin B₁ detection**
S. Charernchai*¹, M. Chikae¹, W. Wonsawat², M. Biyani¹, P.T. Tue¹, Y. Takamura¹, ¹Japan Advanced Institute of Science and Technology, Japan, ²Suan Sunandha Rajabhat University, Thailand
- [P1.22] A vibrated self-sensing CMOS MEMS microcantilever sensor for whole blood coagulation time monitoring**
Y.S. Chen*, Y.K. Yen, National Taipei University of Technology, Taiwan
- [P1.23] Modelling, design and development of an electrochemical biosensor for real-time monitoring of cell stress in bioreactor**
B. Chen*, R. Luxton, J. Kiely, University of the West of England, UK
- [P1.24] Development of novel semiconductor manufacturing electrochemical biosensor (SMEB) platform for point-of-care testing (POCT) diagnosis**
L.C. Chen*, W.L. Chen, F.L. Ng, C.S. Tai, National Chiao Tung University, Taiwan
- [P1.25] Integrated nanoplasmonic biosensing array for investigating adipose tissue inflammation**
J. Zhu¹, J. He², P. Chen², J.O. Aleman¹, W. Chen*¹, ¹New York University, USA, ²Auburn University, USA
- [P1.26] Label-free and reagentless capacitive Aptasensor for thrombin**
H-J. Chen, R.L.C. Chen, B-C. Hsieh, H-Y. Hsiao, Y. Kung, Y-T. Hou, T-J. Cheng*, National Taiwan University, Taiwan
- [P1.27] Fabrication of an electrochemical biosensor based on graphene for detection of DNA molecules**
E.A. Chiticaru*¹, T. Tite¹, G.M. Vlasceanu^{1,2}, M. Pandele², J.S. Burns¹, M. Ionita^{1,2}, ¹Faculty of Medical Engineering, University Politehnica of Bucharest, Romania, ²Advanced Polymer Materials Group, University Politehnica of Bucharest, Romania
- [P1.28] Real-time sorting system for corn seed viability using hyperspectral imaging**
C. Wakholi, B. Cho*, Chungnam National University, Republic of Korea
- [P1.29] Potentiometric calcium selective microsensor for early diagnosis of periodontal disease**
C.M. Cristache*^{1,2}, I. Agir³, R. Yildirim³, G. Cristache², M. Nigde³, E. Eftimie-Totu⁴, ¹"Carol Davila" University of Medicine and Pharmacy, Romania, ²Concordia Dent Clinic, Romania, ³Istanbul Medeniyet University, Turkey, ⁴University Politehnica of Bucharest, Romania
- [P1.31] One step poly (amidoamine) dendrimer-based poly (methyl methacrylate) surface modification for development of plasmonic fiber optic biosensors**
M. Divagar*¹, J. Saumey², S. Jitendra², V.V.R. Sai¹, ¹Indian Institute of Technology, India, ²VIT, India
- [P1.32] U-bent fiber optic plasmonic biosensor for detection of tuberculosis (TB) antigen mannosylated lipoarabinomannan (Man-LAM)**
M. Divagar*, J. Vani, V.V.R. Sai, Indian Institute of Technology, India

- [P1.33] Enhancing glucose sensitivity of non-enzymatic carbon paper-based glucose sensor using iron oxide nanoparticles**
C. Kumari*, A. Tiwari, A. Dixit, *Indian Institute of Technology Jodhpur, India*
- [P1.34] Disposable electrochemical biosensors based in graphene and carbon nanotubes for the detection of okadaic acid in seawater**
A. Duarte*, J. Antunes¹, M. Klak¹, C.I.L. Justino¹, J.P. Costa¹, S. Cardoso², T.A.P. Rocha-Santos¹, ¹*University of Aveiro, Portugal*, ²*INESC-MN, Portugal*, ³*Instituto Superior Técnico, Portugal*
- [P1.35] Impedance spectroscopy and toxin maps applied to real-time screening of cellular toxicity**
J. Eveness*, A. Gasser², J. Kiely¹, R. Luxton¹, D. Attwood¹, ¹*University of the West of England, UK*, ²*Nobel Biocare, Switzerland*
- [P1.36] Composite hydrogels for enzyme biosensors**
D. Ferrier, *University of the West of England, UK*
- [P1.37] Manipulating electrode configurations (from single layers to three-dimensional printed structures) to enhance electrochemical sensing applications**
A. Garcia-Miranda Ferrari*, D.A.C. Brownson, C. Banks, *Manchester Metropolitan University, UK*
- [P1.38] Impedometric cell deformability assay using a unique multi-constriction microfluidic biosensor**
P. Ghassemi*, J. Strobl, M. Agah, *Virginia Tech, USA*
- [P1.39] Biosensors based on the extract of the fruit of jurubeba (*Solanum paniculatum* L.) and modified silica for the analysis of phenolic drugs**
E. Gil*, L. Garcia¹, R. Antunes¹, V. Somerset², F. Marques¹, ¹*Universidade Federal de Goias, Brazil*, ²*Cape Town University of Technology, South Africa*
- [P1.40] Spectroscopic Immunosensors for the quantification of the trichothecene Verrucarín-A in environmental samples**
E. Gosselin*, A. Van Cauwenberge², J. Conti¹, O. Denis³, J. De Coninck¹, ¹*UMONS, Belgium*, ²*Hainaut Vigilance Sanitaire, Belgium*, ³*Pasteur Institute ISSP, Belgium*
- [P1.42] Biopolymer based ionogels as active layers in low-cost gas sensors and electronic noses**
M. Netto¹, J. Gruber*, R. Li² ¹*Universidade de São Paulo, Brazil*, ²*Universidade Brasil, Brazil*
- [P1.43] Sub-femto molar detection of *E. coli* O157: H7 bacterial DNA using functionalized Al-doped ZnO single nanorod electrical devices**
P. Guha Ray*, P. Basak², S. Dhara¹, ¹*Indian Institute of Technology Kharagpur, India*, ²*Jadavpur University, India*
- [P1.44] An electrochemical multiple signal amplification assay for detection of tau-441 protein in human serum**
X.Y. Li*, N. Jaffrezic-Renault², Z.Z. Guo¹, ¹*Hubei Province Key Laboratory of Occupational Hazard Identification and Control; School of Public Health, Medical College; Wuhan University of Science and Technology, China*, ²*Institute of Analytical Sciences, University of Lyon, France*
- [P1.45] A microfluidic signal-off biosensor for rapid and sensitive detection of *Salmonella* using magnetic separation and enzymatic catalysis**
Y. Hou, R. Guo*, L. Xue, J. Lin, *China Agricultural University, China*
- [P1.46] Development of a BTB-/TBA⁺ ion-paired dye-based CO₂ indicator and its application in a multilayered intelligent packaging system**
J. Han*, I. Choi, H. Song, *Korea University, Republic of Korea*
- [P1.47] Ultrasensitive biosensing based on nitrosoreductase-like nanocatalyst**
P. Nandhakumar, A.M.J. Haque*, H. Yang, *Pusan National University, Republic of Korea*
- [P1.48] Analytical model describes the effect of poly-ethylene glycol on ionic screening of analyte charges in transistor-based immunosensing**
N. Haustein*, O. Gutierrez-Sanz¹, A. Tarasov², ¹*BioMed X GmbH, Germany*, ²*Hochschule Kaiserslautern, Germany*
- [P1.49] A sandwich electrochemical immunosensor for leptin detection using o-phenylenediamine (oPD) in diet-induced obesity (DIO) model**
Y.S. Heo*, R. Seong, *Keimyung University, Republic of Korea*
- [P1.50] Assessment of an electrochemical *E. coli* detector and its potential for coupling to a filtration device to improve detection times**
E.J.H. Han, K. Palanisamy, S. Wuertz, J. Hinks*, *Singapore Centre for Environmental Life Sciences Engineering, Singapore*

- [P1.51] Anodic stripping voltammetric determination of zinc at a 3-D printed carbon electrode using a carbon pseudo-reference electrode**
K.C. Honeychurch^{*1}, Z. Rymansaib², P. Iravani², ¹University of the West of England, UK, ²University of Bath, UK
- [P1.52] Modelling Pupillary Dynamics including Pupillary Reflex and Pupil Size Variability**
K. Hung, The Open University of Hong Kong, Hong Kong
- [P1.53] Electrochemical detection of amplified DNAs using zink finger protein**
C. Fang, A.M. Ichzan^{*}, H. Yang, Pusan National University, Republic of Korea
- [P1.54] Mouthguard biosensor “cavitous sensor” for monitoring of saliva glucose integrated with telemetry system**
T. Arakawa, K. Tomoto, H. Nitta, Z. Zhang, K. Toma, K. Mitsubayashi, K. Iitani^{*}, Tokyo Medical and Dental University, Japan
- [P1.55] Skin gas monitoring system using high-sensitive ethanol bio-sniffer (gas-phase biosensor) using transdermal gas concentrating device**
T. Arakawa, T. Aota, C. Po-Jen, M. Ye, K. Toma, K. Mitsubayashi, K. Iitani^{*}, Tokyo Medical and Dental University, Japan
- [P1.56] Rapid ‘on-off’ detection of e-coli using natural silica-based fluoroscent nanoparticles**
S.N.A. Jenie^{*1}, F.S.H. Krismastuti¹, Z. Udin¹, N. Artanti¹, R.T. Dewi¹, Y. Kusumastuti², ¹Indonesian Institute of Sciences, Indonesia, ²Universitas Gadjah Mada, Indonesia
- [P1.57] Solution-processed wearable biosensors for exhaled breath monitoring systems**
J-Y. Jeon^{*}, B-C. Kang, T-J. Ha, Kwangwoon University, Republic of Korea
- [P1.58] A study of various substrate materials in screen-printing electrodes fabrication**
S. Kalpana^{*1}, W-J. Chen¹, L-C. Lai¹, J-H. Hsu¹, C-T. Liao¹, P-J. Lee¹, J-Z. Tsai², ¹National Taipei University, Taiwan, ²National Central University, Taiwan
- [P1.59] Development of flexible graphene screen-printed electrodes with improved electrochemical performance**
S. Kalpana^{*1}, Y-C. Lai¹, J-H. Hsu¹, W-J. Chen¹, C-T. Liao¹, P-J. Lee¹, J-Z. Tsai², ¹National Taipei University, Taiwan, ²National Central University, Taiwan
- [P1.60] A low cost, precise and portable device for detection of serotonin using in-pipette tip monolithic solid phase micro-extraction and printed graphene sensor**
C. Karuwan¹, W. Kamsong^{*1}, A. Sappat¹, K. Ar-sanork², P. Chaisuwan², A. Tuantranont¹, ¹National Science and Technology Development Agency, Thailand, ²Suranaree University of Technology, Thailand
- [P1.61] All-solution-processed biosensors for detection of cortisol down to μM concentration**
B-C. Kang^{*}, J-Y. Jeon, T-J. Ha, Kwangwoon University, Republic of Korea
- [P1.62] A smart microfluidic platform for rapid multiplexed detection of foodborne pathogens**
K. Kant^{*1}, S. Azinheiro¹, P. Conceicao¹, M.A. Shahbazi², M. Prado¹, L. Dieguez¹, ¹International Iberian Nanotechnology Laboratory (INL), Portugal, ²University of Helsinki, Finland
- [P1.63] Optimum arrangement of micropillars and sidewalls for wireless PDMS-QCM biosensor chip**
F. Kawashima, N. Masumoto, F. Kato^{*}, Nippon Institute of Technology, Japan
- [P1.64] Biosensing off a bead, the integration of PoC technologies specifically for resource limited settings**
F.B. Khumalo^{*1}, N.R. Hendricks-Leukes¹, J.M. Blackburn¹, ¹University of Cape Town, South Africa, ²Council for Scientific and Industrial Research, South Africa
- [P1.65] SPR-based detection of toluene**
M. Kim, KRIBB, Republic of Korea
- [P1.66] Microplate cover-based colorimetric assay for detection of H₂S and its application to characterization of H₂S releasing kinetics of various H₂S donors**
T.J. Kim^{*}, Y.J. Ahn, S.K. Lee, Y.J. Lee, G.J. Lee, Kyung Hee University, Republic of Korea
- [P1.67] Development of an electrochemical immunosensor for DHEAs detection operating with NFC potentiostat**
K. Krorakai¹, S. Klangphukhiew^{*1}, R. Patramanon^{1,2}, ¹Khon Kaen University, Thailand, ²Protein and Proteomics Research Center for Commercial and Industrial Purposes (ProCCI), Thailand

- [P1.68] Portable immunosensor for determination of age-related biomarker albumin with graphene-chitosan modified surface**
S. Klangphukhiew*¹, R. Somsu¹, K. Krarakai¹, R. Patramanon^{1,2}, ¹*Khon Kaen University, Thailand*, ²*Protein and Proteomics Research Center for Commercial and Industrial Purposes (ProCCL), Thailand*
- [P1.69] Single-cell bioluminescence analysis of active caspases**
K. Kleparnik*, V. Ledvina, *Institute of Analytical Chemistry, v.v.i., Czech Academy of Sciences, Czech Republic*
- [P1.70] Electrochemical determination of antipsychotic drug using a novel nanosensor based on NH₂-functionalized multi walled carbon nanotubes, ZnO nanoparticles and graphene quantum dots**
S. Kurbanoglu*¹, S. Aftab^{1,2}, G. Ozcelikay¹, A. Shah^{2,3}, F. Jan Iftikhar², S.A. Ozkan¹, ¹*Ankara University, Turkey*, ²*Quaid-i-Azam University, Pakistan*, ³*University of Bahrain, Bahrain*
- [P1.71] Electrochemical biosensor based on silicon nanowires/platinum nanoparticles-modified electrode for detection of porcine DNA**
N. Kusnin*, N.A. Yusof, J. Abdullah, S. Sabri, S. Mustafa, *Universiti Putra Malaysia, Malaysia*
- [P1.72] Isolation of HER-2 specific circulating tumor cells using a magnetic gradient microfluidic system**
J.H. Lee, H.S. Kim, B.S. Kwak*, *Korea Institute of Machinery and Materials, Republic of Korea*
- [P1.73] Droplet-based microfluidic system for multi-cellular breast tumor spheroid formation**
S.W. Cho^{1,2}, J.S. Lim², H.S. Kim¹, B.S. Kwak*¹, ¹*Korea Institute of Machinery and Materials, Republic of Korea*, ²*Yeungnam University, Republic of Korea*
- [P1.74] An electrochemical immunosensor for acrylamide detection via a displacement assay**
P.Y. Lau*, Y. Alias, S.M. Khor, *University of Malaya, Malaysia*
- [P1.75] Thermophoretic immunoassay based on auto displayed Z-damain proteins on Escherichia coli**
G.Y. Lee*¹, J.H. Bong¹, J. Jose¹, J.C. Pyun¹, ¹*Yonsei University, Republic of Korea*, ²*Muenster University, Germany*
- [P1.76] Vertically paired interdigitated electrode using parylene for immunoassay**
J.H. Park, G.Y. Lee*, S. Cho, J.C. Pyun, *Yonsei University, Republic of Korea*
- [P1.77] Facile method to evaluate antimicrobial activity using microbial respiration-based detection**
D. Lee*¹, J. Koo^{1,2}, O. Kwon¹, K-H. Lee¹, G. Kim^{1,2}, ¹*Korea Institute of Machinery and Materials (KIMM), Republic of Korea*, ²*Kyungpook National University, Republic of Korea*
- [P1.78] Development of rapid lateral flow test strips for detection of salivary pepsin**
Y.J. Lee*, T.J. Kim, H.K. Kim, G.J. Lee, *Kyung Hee University, Republic of Korea*
- [P1.79] Acoustically enhanced cellular uptake of carboxyl-modified polystyrene microspheres using standing waves**
V. Levario Diaz*, D. Benito-Alifonso, S. Medina, A. Leard, A. Herman, L. Sueiro Ballesteros, A. Barnes, P. Verkade, C. Galan, *University of Bristol, UK*
- [P1.81] Fabrication of a multi-peptide-based biosensor for enhancing the detection of streptococcus pneumoniae**
C-K. Huang¹, Y. Ito², Y-K. Li*¹, ¹*National Chiao Tung University, Taiwan*, ²*RIKEN, Japan*
- [P1.82] Amperometric Biosensor Based on Enzyme Immobilized Two-dimensional Ta-ZnO Nanomaterials for Ultrasensitive detection of Cancer Biomarker**
C. Murugan*, S. Anandhakumar, *SRM Research Institute, India*
- [P1.83] Diphenyl-imidazol derived selective turn-on fluorescent sensor for Pb²⁺ & Co²⁺ ions and its bio-imaging in living cells**
M. Sethupathi, N. Sengottuvelan*, *Alagappa University, India*
- [P1.84] Low power electromagnetic field influences on bio-materials**
E. Ionita^{1,2}, A. Marcu*³, M. Temelie¹, M. Serbanescu³, M. Ciubotaru^{1,2}, ¹*Colentina Clinical Hospital, Romania*, ²*HoriaHulubei National Institute for R&D in Physics and Nuclear Engineering, Romania*, ³*National Institute for Laser Plasma and Radiation Physics, Romania*
- [P1.85] The self-priming hairpin assisted isothermal amplification for the highly sensitive detection of nucleic acids**
J.Y. Song*, Y.J. J., H.G. P., *Korea Advanced Institute of Science and Technology, Republic of Korea*

Poster Session 2
Tuesday 18 June 2019, 12:40 – 13:15
Room – Ballroom B

- [P2.01] Early stage detection of *Staphylococcus epidermidis* biofilm formation using MgZnO dual gate TFT biosensor**
G. Li*, Y. Wu, Y. Li, Y. Hong, X. Zhao, P. Reyes, Y. Lu, Rutgers University, USA
- [P2.02] Dynamic monitoring of antimicrobial susceptibility in *Staphylococcus epidermidis* and *Pseudomonas aeruginosa* using MgZnO nanostructure-based biosensors**
Y. Wu, G. Li*, Y. Hong, X. Zhao, P. Reyes, Y. Lu, Rutgers University, USA
- [P2.03] SERS-based assay for rapid detection of haptoglobin in ovarian cyst fluid as an early stage diagnostic tool for epithelial ovarian cancer**
M. Olivo¹, J. Perumal¹, G. Balasundaram¹, A. Mahyuddin*², M. Choolani², ¹Singapore Bioimaging Consortium, Singapore, ²National University of Singapore, Singapore
- [P2.04] Biomarker's application for detecting breast cancer**
S. Bag¹, P. Mandal*^{2,1}, S. Das¹, U. Bhattacharyya³, S. Chakraborty², R. Tikader¹, S. Poddar⁴, J. Khanam², ¹TAAB Biostudy Services, India, ²Jadavpur University, India, ³Indian Institute of Science, India, ⁴Calcutta Institute of Technology, India
- [P2.05] A "swiss army knife" approach using aptamers and nanopores**
R. Maugi*, B. Gamble, M. Platt, Loughborough University, UK
- [P2.06] Towards Sustainable, Wireless, Autonomous Nanocellulose-based Quantitative Drug of Abuse Biosensing Platform**
E. Melnik*, C. Steininger, G. Mutinati, Austrian Institute of Technology GmbH, Austria
- [P2.07] Fetal hypoxia in vivo monitoring with electrochemical micro-array**
M. Mir*^{4,1}, S. Dulay¹, L. Rivas Torcates¹, S. Miserere¹, L. Pla³, S. Berdún Marin³, E. Gratacos³, M. Illa³, J. Samitier^{1,2}, ¹Institute for Bioengineering of Catalonia, Spain, ²University of Barcelona, Spain, ³Hospital Clínic and Hospital Sant Joan de Déu, Universitat de Barcelona, Spain, ⁴Centro de Investigación Biomédica en Red en Bioingeniería, Biomateriales y Nanomedicina, Spain
- [P2.09] Efficiency of chitosan on a paper-based model colorimetric assay**
M. Wu, V.A. Mirón-Mérida*, Y.Y. Gong, Y. Guo, F.M. Goycoolea, University of Leeds, UK
- [P2.10] Strategies in developing a sensitive electrochemical immunosensor for the detection of *Xanthomonas oryzae* in rice**
N.A. Mohd Said*, H. Razali, N.H. Husin, R. Abd Rahman, N. Awaludin, M.A. Abdul Talib, N.A. Masdor, F. Salam, Malaysian Agricultural Research and Development Institute (MARDI), Malaysia
- [P2.11] Labelless impedimetric study for T-2/HT-2 toxin immunosensor using silicon-based gold microfabricated electrode array**
N.A. Mohd Said*¹, K. Twomey², V.I. Ogourtsov², ¹Malaysian Agricultural Research and Development Institute (MARDI), Malaysia, ²Tyndall National Institute, Ireland
- [P2.12] Redox responsive nanoferrrogels flexible sensor for metabolics analytics**
S. Mugo*¹, W. Lu¹, N. Funk^{1,2}, ¹MacEwan University, Canada, ²University of Alberta, Canada
- [P2.13] A novel colorimetric paper sensor for the selective and sensitive determination of gallic acid in vegetable samples**
S. Mukdasai*, S. Srijaranai, Khon Kaen University, Thailand
- [P2.14] Electrochemical determination of Fumonisin B1 based on molecularly imprinted polymer nanoparticles**
H. Munawar*^{1,2}, A. Garcia-Cruz^{1,3}, P. Marote⁴, K. Karim¹, W. Kutner³, S. Piletsky¹, ¹University of Leicester, UK, ²Indonesian Research Centre for Veterinary Science, Indonesia, ³Polish Academy of Sciences, Poland, ⁴Université Claude Bernard Lyon, France
- [P2.16] Portable *Escherichia coli* Bacteria Sensor Using Graphene as Sensing Material**
A. Muslihati*^{1,2}, K.M. Wibowo¹, Z. Sahdan^{1,3}, H. Basri^{1,2}, N. Rosni¹, ¹Microelectronics and Nanotechnology Shamsuddin Research Centre (MiNT-SRC), UTHM, Malaysia, ²Faculty of Applied Science and Technology, University Tun Hussein Onn Malaysia, Malaysia, ³Preston Geocem Sdn. Bhd, Malaysia
- [P2.17] A dual role of nitrogen-doped carbon quantum dots: bio-imaging of living cells and simultaneous voltammetric determination of anticancer and antibiotic drug in biological samples**
G. Muthusankar*, R. Keerthika Devi, G. Gopu, Alagappa University, India

- [P2.18] Nanogap-independent SERS sensor for multiplexed biomolecule detections**
H-K. Na*, J-S. Wi, T.G. Lee, KRIS, Republic of Korea
- [P2.19] Highly sensitive DNA detection based on negative dielectrophoresis of DNA-labeled microbeads using simple microfluidic device**
M. Nakano*, K. Matsuda, J. Xu, Z. Ding, J. Suehiro, Kyushu University, Japan
- [P2.20] Wafer-scale fabrication of nanochannel ion transistors for detecting single DNA molecules**
S.W. Nam, Kyungpook National University, Republic of Korea
- [P2.21] In-depth electrochemical investigation of surface attached microscopic fungus**
A. Nikhitha*, J. Sonia, K. Sudhakara Prasad, S. Manjunath, Yenepoya University, India
- [P2.22] Thorns-like three-dimensional biosensor surface based on biotinylated polyelectrolytes**
W. Pan*, X. Duan, Tianjin University, China
- [P2.23] Affinity peptide-decorated electrochemical protein biosensor for the detection of neutrophil gelatinase-associated lipocalin**
C.H. Cho¹, M.Y. Ryu¹, J.H. Kim¹, T.J. Park², J.P. Park*¹, ¹Daegu Haany University, Republic of Korea, ²Chung-Ang University, Republic of Korea
- [P2.24] Development of a rapid detection of bovine viral diarrhoea virus using the signal enhancement of nanoparticles**
M.W. Kim¹, H.J. Park², J.P. Park³, T.J. Park*¹, ¹Chung-Ang University, Republic of Korea, ²Kyungpook University, Republic of Korea, ³Daegu Haany University, Republic of Korea
- [P2.25] Embedded microfluidic pressure sensor for real-time microchannel pressure monitoring**
H. Song¹, J. Yao¹, K. Peng¹, H. Kim², J. Park*¹, ¹Southern University of Science and Technology, China, ²Korea Institute of Machinery & Materials, Republic of Korea
- [P2.26] Microchip for detection/quantification of mechanical stress induced astaxanthin from microalgae**
J. Yao¹, J. Kim², H. Kim³, Y. Choi², J. Park*¹, ¹Southern University of Science and Technology, China, ²Korea University, Republic of Korea, ³Korea Institute of Machinery & Materials, Republic of Korea
- [P2.27] Phage display based development of melamine specific bioreceptor, and their verification**
K.Y. Park, C.Y. Park*, S.H. Baek, S.Y. Ha, J.P. Shin, S. Feng, M.W. Kim, T.J. Park, Chung-Ang University, Republic of Korea
- [P2.28] Detection methodology of toxic ions using DNA modified resonator**
W. Park*¹, C. Park², S. Na², K. Park¹, K. Jang¹, ¹Hoseo University, Republic of Korea, ²Korea University, Republic of Korea
- [P2.29] Label-free biosensor for investigating small molecule and nanoparticle interaction with living cells**
B. Péter*¹, I. Szekacs¹, H. Nakanishi², I. Lagzi^{3,4}, S. Bosze⁵, R. Horvath¹, ¹Institute for Technical Physics and Materials Science, Hungary, ²Kyoto Institute of Technology, Japan, ³Budapest University of Technology and Economics, Hungary, ⁴MTA-BME Condensed Matter Research Group, Hungary, ⁵MTA-ELTE Research Group of Peptide Chemistry, Hungary
- [P2.30] Multiplexed mycotoxins determination employing white light reflectance spectroscopy and silicon chips with silicon oxide areas of different thickness**
V. Anastasiadis¹, P. Petrou*¹, G. Koukouvinos¹, K. Misiakos¹, D. Goustouridis², I. Raptis², S.E. Kakabakos¹, ¹NCSR Demokritos, Greece, ²ThetaMetrisis S.A., Greece
- [P2.31] One-spot synthesis of carbon dots with intrinsic folate receptor for synergistic imaging-guided photothermal therapy of prostate cancer cells**
L.M.T. Phan*, A.G. Gul, M.W. Kim, T.J. Park, ChungAng university, Republic of Korea
- [P2.32] Towards a point of care system for the rapid recognition of biomarkers in saliva from COPD patients by paramagnetic particle detection**
M. Piano*¹, J. Kiely¹, P. Wraith¹, T. Cox¹, M. Spiteri², N. Patel², R.W. Luxton¹, ¹University of the West of England, UK, ²University Hospitals of North Midlands NHS Trust, UK
- [P2.33] A theoretical study on the diffusion and reaction process that occurs within the E-matrix of a sandwich-type amperometric biosensor**
T. Praveen*¹, M. Veeramuni², ¹Vellore Institute of Technology, India, ²Thiagarajar College, India, ³Academy of Maritime Education and Training, India
- [P2.34] Single mediator system for ultrasensitive detection of Aspergillus niger**
J. Kwon, P. Prayikaputri*, H. Yang, Pusan National University, Republic of Korea

- [P2.35] Paper chromatography coupled with electrochemical detection for quantification of adulterated dexamethasone and prednisolone in traditional medicines**
V. Primpray*¹, O. Chailapakul¹, M. Tokeshi², T. Rojanarata³, W. Laiwattanapaisa¹, ¹Chulalongkorn University, Thailand, ²Hokkaido University, Japan, ³Silpakorn University, Thailand
- [P2.36] Anti-lipopolysaccharide antibodies isolated from human serum for immunoassay of E. coli**
J.H. Bong, J. Kim, G.Y. Lee, J.H. Park, T.H. Kim, J.C. Pyun*, Yonsei University, Republic of Korea
- [P2.37] Prothrombin time monitoring using laser speckle contrast imaging**
A. Rahi*¹, A.H. Atabaki¹, E. Pishbin², H. Rafii-Tabar¹, P. Sasanpour¹, ¹Shahid Beheshti University of Medical Sciences, Iran, ²Iran University of Science and Technology, Iran
- [P2.38] Multitasking upconversion nanoparticles for enhanced pH-responsive and near-infrared-activated cancer therapy**
R. Rafique, A. Rana Gul*, I.G. Lee, T.J. Park, Chung-Ang University, Republic of Korea
- [P2.39] An electrochemical sensor-based gold nanoparticle decorated reduced graphene oxide for the detection of pyocyanin as a biomarker of pseudomonas aeruginosa**
J.I.A. Rashid*, M.H. Ahmad, S. Taufik, N.A. Yusof, National Defense University of Malaysia, Malaysia
- [P2.40] A biomimetic approach for an optical glyphosate sensor with femtomolar sensitivity**
D. Rettke*¹, S. Martin¹, J. Döring², J. Waschke³, S. Schmidt⁴, K. Ostermann², T. Pompe¹, ¹Universität Leipzig, Germany, ²Technische Universität Dresden, Germany, ³Max Planck Institute for Human Cognitive and Brain Science, Germany, ⁴Heinrich-Heine-Universität Düsseldorf, Germany
- [P2.41] Simultaneous bacteria biosensor utilizing alkaline phosphatase-sensitive carbon dots-intercalated montmorillonite with immobilized Fe₃O₄ and CsWO₃ for reusability and antibacterial activity**
A.I. Robby*, S.G. Kim, S.Y. Park, Korea National University of Transportation, Republic of Korea
- [P2.42] Label-free impedimetric biosensor for bovine herpesvirus type 1-antigen detection**
E. Rodrigues*¹, I. Macêdo¹, D. Thomaz¹, G. Souza¹, I. Wastowski², E. Gil¹, ¹Universidade Federal de Goiás, Brazil, ²Universidade Estadual de Goiás, Brazil
- [P2.43] Development of electrochemical nano-biosensors for glucose via nanoflower-decorated nanofiber hybrid**
S.H. Baek, J.H. Roh*, C.Y. Park, T.J. Park, Chung-Ang University, Republic of Korea
- [P2.44] Development of biodegradable film based on starch and chitosan for colorimetric sensing**
K. Rovina*, N.S. Sulaiman, V.M. Joseph, S.A.S. Samsudin, Universiti Malaysia Sabah, Malaysia
- [P2.45] Functional polymer for modified aptamer binding in development of estrogenic endocrine disrupting chemicals aptasensor**
N. Rozi*¹, N.H. Abd Karim¹, M. Ikeda², S.A. Hanifah¹, ¹National University of Malaysia, Malaysia, ²Gifu University, Japan
- [P2.46] Point of care (poc) device with magnetic beads and microfluidic paper electrodes for the fast and quantitative electrochemical detection of plasmodium antigen**
G. Ruiz Vega*¹, A. Sánchez Montalvá¹, E. Sulleiro Igual², I. Molina Romero¹, J. del Campo³, E. Baldrich¹, ¹Vall Hebron Research Institute (VHIR), Spain, ²Vall Hebron University Hospital (VHUH), Spain, ³Centro Nacional de Microelectrónica (IMB-CNM, CSIC), Spain
- [P2.47] pH-responsive indocyanine green-loaded zwitterionic carbon dot-encapsulated mesoporous silica nanoparticles for nir photothermal therapy**
B. Ryplida*, G.Y. Seo, S.Y. Park, Korea National University of Transportation, Republic of Korea
- [P2.49] Immuno-Nanobiosensor for detecting leptospirosis**
K. Sapna*¹, K. Sudhakara Prasad¹, A.B. Arun¹, W. Chaicumpa², ¹Yenepoya University, India, ²Mahidol University, Thailand
- [P2.50] Wireless quartz crystal microbalance biosensor with high hydrogen-absorbing sputtered thin film for evaluating hydrogen concentration in breath**
Y. Sato*, Y. Ishii, N. Masumoto, F. Kato, Nippon Institute of Technology, Japan

- [P2.51] Ultrasensitive electrochemical immunosensor using 1-amino-2-naphthyl phosphate and ammonia-borane**
J. Seo, S. Seo*, H. Yang, *Pusan National University, Republic of Korea*
- [P2.52] Macrocyclic "tet a" derived Colorimetric sensor for the detection of mercury and hydrogen sulphate and its bio-imaging in living cells**
M. Sethupathi*, N. Sengottuvelan, *Alagappa University, India*
- [P2.53] Electrochemical immunosensor for early detection of chronic kidney disease based on polyaniline-gold nanocomposite modified screen printed electrode**
M.O. Shaikh*¹, B. Srikanth², P.Y. Zhu², C.H. Chuang¹, ¹*National Sun Yat-sen University, Taiwan*, ²*Southern Taiwan University of Science and Technology, Taiwan*
- [P2.54] Characterization of plasmonic biosensors for direct and amplification-less quantitation of circulating nucleic acids using nanoparticle tracking analysis**
P. Shalaev¹, S. Dolgushin*^{1,2}, S. Karjee Mishra⁴, A. Mishra³, S. Tereshchenko¹, ¹*National Research University of Electronic Technology, Russia*, ²*Gamaleya Research Center of Epidemiology and Microbiology, Russia*, ³*KIIT-School of Biotechnology, India*, ⁴*Prantae Solutions, India*
- [P2.55] Cationic polymer coated plasmonic U-bent plastic optic fiber probe for attomolar detection of DNA**
P. Jain, G. Annasamy, K. Shamlee J*, V.V.R. Sai, *Indian Institute of Technology Madras, India*
- [P2.56] Light-up RNA aptamer-based immunoassay using in vitro transcription**
J.E. Sim*, J.Y. Byun, Y.B. Shin, KRIBB, *Republic of Korea*
- [P2.57] Voltammetric analysis of vitamin B1 using cobalt phthalocyanine screen printed carbon electrodes**
A. Smart*, K.L. Westmacott, A. Crew, O. Doran, J.P. Hart, *University of the West of England, UK*
- [P2.58] Improved sensing reliability of In-Ga-Zn-O electrolyte-gated field effect transistor with bilayer active structures**
H. Son*, J. Park, D. Kim, T. Kim, *Korea University, Republic of Korea*
- [P2.59] Fabrication of electrochemical paper analytical devices(epad) and the role of oxygen and edge-plane sites towards the sensing**
J. Sonia*, K. Sudhakaraprasad, *Yenepoya University, India*
- [P2.60] PiezoMEMS for Biosensors**
M. Soundara Pandian*¹, R. Luxton², E. Marigo Ferrer¹, M.N.A. Bin Muhamad Darham¹, N.S. Binti Roslan¹, ¹*SilTerra Malaysia Sdn Bhd, Malaysia*, ²*University of the West of England, UK*
- [P2.61] Ultrasensitive electrochemical determination of salivary cortisol with molecularly imprinted conductive polymers**
Z-L. Su*¹, M-H. Lee², D. O'Hare³, W-C. Lo¹, C-H. Yang¹, H-Y. Lin¹, ¹*National University of Kaohsiung, Taiwan*, ²*I-Shou University, Taiwan*, ³*Imperial College, UK*
- [P2.62] Effects of light-emitting diode on the electrochemical biosensing of uric acid using graphene oxide nanoribbons**
C.L. Sun*^{1,2}, C.H. Lin¹, B.S. Lin¹, H.Y. Chen¹, ¹*Chang Gung University, Taiwan*, ²*Linkou Chang Gung Memorial Hospital, Taiwan*
- [P2.63] The optimal graphene quantum dots (GQDs) based FRET-induced quenching DNA-sensor for the detection of Escherichia coli O157:H7**
M.S. Suria*^{1,2}, A. Jaafar¹, A.R. Suraya¹, W.F. Yap¹, S. Faridah², H.Y. Lau², ¹*Universiti Putra Malaysia, Malaysia*, ²*Malaysian Agricultural Research and Development Institute, Malaysia*
- [P2.64] Molecularly Imprinted Polymers as advanced sensing materials for detection of neurotrophic factor proteins**
J. Reut, A. Kidakova, R. Boroznjak, A. Öpik, V. Syritski*, *Tallinn University of Technology, Estonia*
- [P2.65] Discovery of integrin targeting and cell adhesion-modifying effects of glyphosate on living cells by label-free optical biosensing**
I. Szekacs*¹, E. Farkas^{1,2}, B.L. Gemes³, E. Takacs³, A. Szekacs³, R. Horvath¹, ¹*Institute of Technical Physics and Materials Science, Centre for Energy Research, HAS, Hungary*, ²*Subdoctoral School of Molecular and Nanotechnologies, Chemical Engineering and Material Science Doctoral School, University of Pannonia, Hungary*, ³*Agro-Environmental Research Institute, National Agricultural Research and Innovation Centre, Hungary*

- [P2.66] **Electrophotonics: Integrated photonic and electrochemical bio-sensing**
S. Thorpe*, G.H. Thomas, T.F. Krauss, S.D. Johnson, University of York, UK
- [P2.67] **Electrochemical nanosensor design for the analysis of oxymetazoline using CNTs and TiO₂ nanoparticles**
A. Munir^{1,2}, B. Bozal-Palabiyik², A. Khan³, A. Shah^{1,4}, B. Uslu^{*2}, ¹Quaid-i-Azam University, Pakistan, ²Ankara University, Turkey, ³Haverling and Redbridge University Hospitals NHS Trust, UK, ⁴University of Bahrain, Bahrain
- [P2.68] **Direct detection of *Salmonella* using inertial microfluidics-based separation and enzymatic catalysis-based colorimetry**
L. Yao^{1,2}, L. Wang^{*1}, N. Liu¹, S. Wang¹, Y. Li², J. Lin¹, ¹China Agricultural University, China, ²University of Arkansas, USA
- [P2.69] **Direct comparison of blue and red-shifted bioluminescence resonance energy transfer-based protease sensors in human plasma**
F. Weihs*, M. Gel, H. Dacres, Commonwealth Scientific and Industrial Research Organisation, Australia
- [P2.70] **Lithographically-defined gold nanobowls to contain and detect target analytes**
J-S. Wi*, J.G. Son, T.G. Lee, Korea Research Institute of Standards and Science, Republic of Korea
- [P2.71] **A novel cell morphology monitoring: proteomic approach in the study of caspase 8 and 9 specific roles in apoptosis of monolayer cells**
I. Williams*, D. Santini, B. Chen, K. Lamb-Riddell, J. Kiely, R. Luxton, Institute of Bio-Sensing Technology, UK
- [P2.72] **Fluorescence-tunable carbon dots-modified silver nanoparticle via poly(vinylpyrrolidone)-catechol crosslinking for simultaneous bacteria sensing and high antibacterial activity**
H.J. Won*, S.G. Roh, G.B. Lee, S.Y. Park, Korea National University of Transportation, Republic of Korea
- [P2.73] **Flexible and wireless biosensing tag for broad-spectrum electrochemical detections**
G. Xu*, C. Cheng, X. Li, Y. Lu, Z. Liu, L. Zhu, Q. Liu, Zhejiang University, China
- [P2.74] **Automatic nanoparticle analyser using surface plasmon resonance microscopy**
Y.T. Yang*, H. Yu, Shanghai Jiao Tong University, China
- [P2.75] **Comparison of surface-modification types for sensor chips of the external force-assisted near-field illumination biosensor**
M. Yasuura*, M. Fujimaki, National Institute of Advanced Industrial Science and Technology (AIST), Japan
- [P2.76] **Electrochemical evaluation of levels of tau-441 in human serum using single-layer graphene nanoplatelet labeled anti-tau-441 as a signal tag**
M.S. Ye^{*1}, N. Jaffrezic-Renault¹, Z.Z. Guo¹, ¹Hubei Province Key Laboratory of Occupational Hazard Identification and Control, Wuhan University of Science and Technology, P.R.China, China, ²Institute of Analytical Sciences, University of Lyon, France
- [P2.77] **Electrochemical aptamer sensors based on a novel composite paper electrode for carcinoembryonic antigen detection**
C.H. Chao, Y.K. Yen*, National Taipei University of Technology, Taiwan
- [P2.78] **Pre-clinical validation study of a miniaturized electrochemical immunoassay based on differential pulse voltammetry for early detection of *mycobacterium tuberculosis***
N.A. Yusof^{*1}, U.Z.M. Azmi¹, N. Kusnin¹, S.S. Md Noor², P.S. Ong³, N.H.A. Raston⁴, ¹Universiti Putra Malaysia, Malaysia, ²Universiti Sains Malaysia, Malaysia, ³NanoMalaysia Berhad, a CLG under the Ministry of Energy, Science, Technology, Environment & Climate Change (MESTECC), Malaysia, ⁴Universiti Kebangsaan Malaysia, Malaysia
- [P2.80] **Doping two dimensional materials in molecularly imprinted conductive polymers for the ultrasensitive determination of 17 β -estradiol in eel serum**
Z-X. Zhang*, Y-S. Huang, C-H. Yang, M-H. Lee, H-Y. Lin, National University of Kaohsiung, Taiwan
- [P2.81] **Label-free photoluminescent biosensor based on non-radiative energy transfer for vascular endothelial growth factor detection in human blood**
Z.L. Zhou*, Y.P. Hsu, H.W. Yang, National Sun Yat-sen University, Taiwan
- [P2.82] **Plasmonic nanohole arrays towards in-hole detection of exosome-like analytes**
Y. Zhu*, M. Khan, P. Reece, B. Pang, Y. Li, UNSW Sydney, Australia

[P2.83] Polyphenol detection by chimera protein modified biosensor

D. Izquierdo-Bote¹, M.B. González-García¹, A. Piscitelli², I. Sorrentino², P. Giardina², D. Hernández-Santos¹, P. Fanjul-Bolado*¹, ¹*Metrohm-DropSens, Spain*, ²*Department of Chemical Sciences, University Federico II, Naples, Italy*

[P2.84] A Novel 3D Printed Ceramic Biosensor Surface for Increased Biocompatibility

J.G.H. Whiting*, I. Williams, P. Worgan, P. Theodosiou, R. Luxton, J. Kiely, *University of the West of England, UK*

[P2.85] Facile synthesis of ceric vanadate/multiwall carbon nanotube nanocomposite and its application in electrochemical sensing of tryptophan in biological samples

G. Gopu*, G. Muthusankar, R. Karkuzhali, *Alagappa University, India*

[P2.86] Performance of recombinant granulocyte colony-stimulating factor based synthetic receptor: binding kinetics of monomeric analyte and dimeric derivatives of analyte linked by different spacers

A. Ramanavicius^{1,2}, J. Talbot⁴, S. Balevicius^{2,3}, Z. Balevicius^{2,3}, A. Ramanaviciene^{1,6}, I. Plikusiene*^{1,2}, A. Stirke^{1,2}, G. Mickiene⁵, L. Tamosaitis², A. Paulauskas², ¹*Institute of Chemistry, Vilnius University, Lithuania*, ²*Center for Physical Sciences and Technology, Lithuania*, ³*Gediminas Technical University, Lithuania*, ⁴*CNRS, Laboratoire de Physique Théorique de la Matière Condensée, Sorbonne Université, France*, ⁵*Life Sciences Center, Vilnius University, Lithuania*, ⁶*NanoTechnas – Centre of Nanotechnology and Materials Science, Vilnius University, Lithuania*